Physical Research Laboratory

Tuesday Seminar

Model-based analyses of an Ocean acidification mesocosm experiment

Abstract

Studies suggest that Ocean acidification (OA) has severe effects on marine phytoplankton. Mesocosm experiments allow investigations on impacts of OA on plankton communities in the vicinity of their natural habitats. Marine ecosystem models serve as an efficient tool to analyze and interpret mesocosm data, as they use mathematical equations to describe processes controlling dynamics of planktonic ecosystems. I will discuss results from a study that investigated effects of OA on phytoplankton growth dynamics by analyzing data from an ocean acidification mesocosm experiment using different model approaches. Applied methods yield the optimized model solutions (with optimised parameter values) that maximize the likelihood probability of models explaining mesocosm data. The model-based data analysis of the experiment suggests that the large variability that was observed in calcification could have been generated due to small differences in initial abundance of coccolithophores during initialization (filling) of mesocosms. The model seems to suggest that OA may enhance carbon fixation rates in phytoplankton, but at the cost of elevated metabolic stress.

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Date	Time	Venue
13-March-2018	16:00 hrs	Ground Floor Lecture Hall

All are invited to attend and participate in discussion

Tea at 15:30 hrs

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